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ENGINEERING
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Case story | VACON® 100 | HVAC drives

VACON® drives Sweden's biggest stadium



Friends Arena is Sweden's national stadium and one of the most modern multifunctional arenas in the world. With the goal of minimizing energy consumption, Vacon provided its systems integrator with VACON® 100 HVAC drives that cleverly use the product's I/O capability and Modbus support.

Friends Arena is located in Solna, just north of Stockholm city centre, and was officially opened on 27 October 2012. In 2011–2012 Vacon AB, which is based in Solna, delivered a total of 200 VACON® 100 HVAC drives with a power range up to 37 kW to its system integrator partner Indoor Energy Control Sweden AB, the main contractor for the building automation system at the arena. VACON® 100 HVAC drives,

which have been specially developed for heating, ventilation and air conditioning applications, were chosen to provide energy control for the pumps and fans in the arena.

Using VACON® AC drives to control the speed of a pump or fan according to actual needs enables significant energy savings to be achieved, resulting in a short payback time, in some cases less than a year. Speed control also improves process control and operational reliability. "VACON's AC drives were chosen for the Friends Arena project to provide the right amount of air at the right time. With this goal in mind, they are working perfectly," states Jan-Olov Josefsson, CEO, Indoor Energy Control Sweden AB.*

Safety first

Safety issues are of great importance in this kind of venue. VACON® 100 HVAC includes a fire mode feature which has been developed to assist in emergencies and help save lives in case of a fire hazard. The fire mode in the VACON® 100 HVAC overrides faults and allows it to operate effectively in case of fire. Another important factor is that the VACON® 100 HVAC complies with the IEC/EN 61000-3-12 harmonics standard. This means that, thanks to integrated EMC/RFI filters and harmonic chokes, the drives do not interfere with other devices and can even be installed in the vicinity of sensitive equipment.

Cost and space savings

The VACON® 100 HVAC drives supplied to Friends Arena are IP54 class. This

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makes installation easier as the IP54 enclosures can be installed directly on the wall and mounted side by side. This generates cost and space savings for the customer.

Improved supervision

VACON® 100 HVAC drives have the Modbus fieldbus communication protocol available as standard. The Modbus fieldbus communicates with an upper-level control system which allows improved supervision options. The built-in fieldbus connections also bring savings in investment costs.

Friends Arena also uses VACON® 100 HVAC drives as a distributed I/O. This offers a wide range of options for input and output signals, which brings benefits such as flexibility and savings in cabling and device costs. I/O options are also used for the flexible control of dampers.

Long-term partnerships, local support

The Friends Arena project set high demands on technological solutions. In engineering and design as well as in selecting partners and suppliers, Indoor Energy Control believes in cooperation and long-term solutions.

"We chose Vacon as our AC drives supplier not only because they have an excellent product, but also for the local support provided. In case of drive failure, it is essential for the end customer that spare units are available quickly and easily. Vacon AB's local head office in Solna itself is able to provide the highest levels of service and support for the customer,"
says Jan-Olov Josefsson, Indoor Energy Control.



They select suppliers that best meet their requirements regarding quality, functionality and usability.

*Indoor Energy Control is part of Indoor Energy Group and focuses on ventilation, heating, cooling and energy control. Indoor Energy Control specializes in building automation engineering, project management, programming and commissioning.

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Cover photo: Friends Arena is named after Friends, an anti-bullying organization, Friends Arena has a total capacity of 65,000 and can be adapted for all sorts of large-scale public events, from business meetings and conferences to major sporting events and concerts. The arena provides a clear view from all seats, has the latest communication

technology and a retractable roof, and offers excellent support services. It is home to Sweden's national men's football team and Stockholm-based Allsvenskan football club AIK. Friends Arena is located in the emerging Arena district in Solna municipality. The Mall of Scandinavia – the largest shopping centre in Scandinavia – is located next to the arena and will open in 2015. Photo courtesy of Friends Arena. Photo by Jason Strong.

This case story was originally released before the merger of Vacon and Danfoss Power Electronics was fully completed on 15 May 2015. As a result, Vacon as a company brand no longer exists and contact persons mentioned in the story may have changed. Future case stories on VACON® products will be released on behalf of the new organization – Danfoss Drives – which is part of the Danfoss Group.